

USSR

ARISTOV, V. V. and ARISTOVA, L. YE. , Mat. modelir. i teoriya elektr. tsepey, vyp. 8, Kiev, "Nauk. Dumka," 1971, pp 67-72

line is calculated and so on up to four, and then the process begins anew. Before the start of the next step these data are entered in the difference correction block of the SDU, where in the course of the next step running differences are determined more precisely and a solution extrapolated to compensate for the lag. The algorithm in question is presented. The system was modeled on a Mir digital computer.

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USSR

UDC: 8.74

ARISTOV, V. V., ARISTOVA, L. Ye.

## "Modeling of a Specialized Digital Computer System"

V sb. Mat. modelir. i teoriya elektr. tsepey (Mathematical Modeling and Electric Circuit Theory--collection of works), vyp. 8, Kiev, "Nauk. dumka", 1971, pp 67-72 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V515)

Translation: The paper deals with a modification of the structure of a computer system consisting of one or more universal digital computers and a specialized digital device designed for realizing numerical integration. In solving a system of differential equations of  $n$ -th order of the type

$$\begin{aligned} pY_1 &= f_1(X, Y_1, Y_2, Y_3, \dots, Y_n), \\ pY_2 &= f_2(X, Y_1, Y_2, Y_3, \dots, Y_n), \\ &\vdots \\ pY_n &= f_n(X, Y_1, Y_2, Y_3, \dots, Y_n) \end{aligned} \quad (1)$$

the universal digital computer continuously calculates the values of the right-hand members from data coming from the specialized digital device. In this connection, only one value of the right-hand member is calculated for every four lines of initial system (1). During the next step, the

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vyp. 8, Kiev, "Nauk. dumka", 1971, pp 67-72

value of the right-hand member is calculated for the next line and so forth up to four. Then the process begins anew. Before the beginning of the next step, these data are transferred to the difference correction module of the specialized digital device where the instantaneous differences are refined during the next step, and the solution is extrapolated to compensate for delay. The corresponding algorithm is presented. The system was modeled on the "Mir" digital computer. V. Mikheyev.

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USSR

UDC: 8.74

ARISTOVA, M. V., IGNAT'YEV, M. V.

"Development of an Algorithmic, Problem-oriented Language for the Control of Manipulators"

Tr. Leningr. In-t Aviats. Priborostr. [Works of Leningrad Institute of Aviation Instrument Building], 1972, No 74, pp 125-133 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V606, by the authors)

Translation: Several approaches are discussed to the control of complex information systems such as robot manipulators. The advantages and disadvantages of the information-logical and algorithmic problem-oriented approaches are discussed. An initial version of a problem-oriented language is suggested which, the authors feel, can serve as the core for a universal manipulator-control language. The syntax and semantics of the language suggested are described. Certain particular types of tasks for manipulators are presented in this language.

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USSR

UDC 576.858.25.095.38:576.895.42

L'VOV, D. K., GROMASHEVSKIY, V. L., SIDOROVA, G. A., TSIRKIN, Yu. M.,  
CHERVONSKIY, V. I., GOSTINSKHCHIKOVA, G. V., and ARISTOVA, V. A., Institute  
of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks  
Ornithodoros Coniceps in Azerbaydzhan"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros  
coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in  
nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago  
in the Caspian Sea. So far, four strains -- prototypes LEIV-28A, -35A, -36A,  
and -46A -- were analyzed and found to be identical. They do not agglutinate  
goose erythrocytes. Serological identification tests performed on the  
LEIV-46A prototype revealed that this strain belongs to the antigenic complex  
of Chenua virus of the Kemerovo group. According to the results of complement  
fixation and neutralization reaction tests, the virus differs from Chenua,  
Punta Salinos, Mono Lake, Kemerovo, Tribec, Lipovnik, and Wad Medani viruses.  
The new virus has been named "Baku virus."

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USSR

UDC 599.323.4:591.526(571.1)

OKULOVA, N. M., ARISTOVA, V. A., and KOSHKINA, T. V., Institute of Poliomyelitis and Virus Encephalitis, Academy of Medical Sciences USSR

"The Effect of Population Density on the Size of Individual Home Ranges of Small Rodents in the West Siberian Taiga"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 6, Jun 71, pp 908-915

Abstract: Data were collected by tagging small rodents over areas of 2.5-4.3 hectares in various types of terrain and recapturing them six to eight times over a period of ten days. An average individual sector was computed for all species inhabiting that zone. Evaluation of the effect of density includes taking into consideration the combined effect of one particular species and of all the other species of small rodents. The effect of the dominant species on the subdominant is much stronger than vice versa. Features of feed availability in different locations are closely related to the population density and do not disrupt the established dependence. The average size of an individual home range of *Clethrionomys rutilus*, the most numerous and dominant species, is determined by the population density to the extent of 86.7%, and that of *Clethrionomys rufocanus* and *Microtus oeconomus*, subdominant species,

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OKULOVA, N. M., et al., Zoologicheskiy Zhurnal, Vol 50, No 6, Jun 71,  
pp 908-915

to .52-.55%. The dependence of the range size (S) on the density of the  
animals (d) is expressed by the hyperbolic function  $s=0.11+(3.55/d)$ .

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USSR

UDC 621.382.322

ARITA, Shigeru (Japan), Matsushita Electronics Corporation (Japan)

"A Field-Effect Transistor With MOS Structure"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287629, class 21, filed 25 Apr 67, published 19 Nov 70, p 199

Translation: This Author's Certificate introduces a field-effect transistor with MOS structure with an insulated gate. As a distinguishing feature of the patent, the device is designed to prevent short-circuiting. A section of the semiconductor layer located opposite the ohmic contact of the gate has a conductivity type different from that of the main semiconductor, forming a PN junction between these two regions. Convention priority from 9 May 1966.

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USSR

UDC 621.317.799:621.382.2 (088.8)

KRICHESKIY, M.E., ARITS, N.A.H.

"Method Of Measurement Of The Effective Lifetime Of Minority Charge Carriers In P-N Junction Of Semiconductor Device"

USSR Author's Certificate No 306512, filed 30 July 66, published 21 July 71  
(from RZh:Elektronika i yeye priimeneniye, No 2, Feb 72, Abstract No 2B577P)

Translation: With the object of increasing the precision of measurement, a current of sinusoidal form is fed to the junction, the frequency of which successively changes up to attainment of the maximum value of the charge, and later with respect to the value of the frequency obtained the effective lifetime of the charge carriers is determined as a reciprocal to this frequency.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ENTHALPY OF FERROUS OXIDE FORMATION -U-  
AUTHOR--(02)-ARIVA, S.M., YAKOVLEVA, M.S.  
COUNTRY OF INFO--USSR *A*  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 508-12  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--IRON OXIDE, HEAT OF FORMATION, ELECTRODE POTENTIAL,  
ELECTROLYTIC CELL, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0855

STEP NO--UR/0076/70/044/002/0508/0512

CIRC ACCESSION NO--AP0104291

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0104291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE EMF. OF THE GALVANIC CELL, PT FE, FEO SUB1 PLUS X (S) 0.85 ZRO SUB2 PLUS 0.15 CAO FEO SUB1 PLUS X PT, AT 1173-1310DEGREESK ALLOWED THE DETN. OF THE TEMP. DEPENDENCY OF THE ENTHALPY OF FORMATION OF FEO SUB1 PLUS X FOR VALUES OF X 0.069-0.1156. DELTA H OF FORMATION IS NOT A LINEAR FUNCTION OF THE O INDEX IN THE FORMULA FEO SUB1 PLUS X. THIS FINDING INDICATES THAT FERROUS OXIDE CANNOT BE CONSIDERED FOR THE ATHERMIC SOLID SOLN. OF (REAL OR HYPOTHETICAL) IRON OXIDES.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70  
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AUTHOR-(02)-ARIVA, S.M., YAKOVLEVA, M.S. A  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 508-12  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.  
TOPIC TAGS--IRON OXIDE, HEAT OF FORMATION, ELECTRODE POTENTIAL,  
ELECTROLYTIC CELL, TEMPERATURE DEPENDENCE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0855 STEP NO--UR/0076/70/044/002/0508/0512  
CIRC ACCESSION NO--AP0104291  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0104291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE EMF. OF THE GALVANIC CELL, PT FE, FEO SUB1 PLUS X (S) 0.85 ZRO SUB2 PLUS 0.15 CAO FEO SUB1 PLUS X PT, AT 1173-1310DEGREESK ALLOWED THE DETN. OF THE TEMP. DEPENDENCY OF THE ENTHALPY OF FORMATION OF FEO SUB1 PLUS X FOR VALUES OF X 0.069-0.1156. DELTA H OF FORMATION IS NOT A LINEAR FUNCTION OF THE O INDEX IN THE FORMULA FEO SUB1 PLUS X. THIS FINDING INDICATES THAT FERROUS OXIDE CANNOT BE CONSIDERED FOR THE ATHERMIC SOLID SOLN. OF (REAL OR HYPOTHETICAL) IRON OXIDES.

UNCLASSIFIED

Inorganic Compounds

USSR

UDC 541.11:541.121/.123

GAL'BRAYKH, E. I., and ~~ARIYA~~ the late S. M., Leningrad State University imeni A. A. Zhdanov

"Enthalpy of Formation of Some Metalline Compounds of Titanium and Zirconium"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 11, Nov 70, pp 2773-2775

Abstract: Enthalpies of formation were previously determined for zirconium nitrides  $ZrN_x$  relating to the homogeneity region of the cubic phase (fcc structure of the NaCl type) and the homogeneity region of the solid solution of nitrogen in zirconium (hexagonal close-packed structure). It was found that the enthalpy of formation linearly depends on the nitrogen index and with the composition  $ZrN_{0.78 \pm 0.05}$  the "enthalpy of formation-composition" line undergoes a sharp bend. The present article establishes that there is a correlation between the composition given which the line inflection is observed in the systems Ti-O,

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GAL'BRAYKH, E. I., et al., Zhurnal Fizicheskoy Khimii, Vol 44,  
No 11, Nov 70, pp 2773-2775

Ti-N, Zr-N and the number of d-symmetry electrons in metallic  
titanium and zirconium obtained from a study of the x-ray emis-  
sion L spectra of these metals.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--SUSCEPTIBILITY OF ~~NIO~~-MGO SOLID SOLUTIONS HARDENED AT VARIOUS  
TEMPERATURES -U-  
AUTHOR--ARIYA, S.M., BORISOVA, N.V., BOBRYSEVA, N.P.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 266-7  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
  
TOPIC TAGS--MAGNESIUM OXIDE, NICKEL OXIDE, MAGNETIC SUSCEPTIBILITY,  
THERMAL EFFECT, X RAY DIFFRACTION ANALYSIS  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0682 STEP NO--UR/0076/70/044/001/0266/0267  
CIRC ACCESSION NO--AP0105658  
UNCLASSIFIED



2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105658

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLID SOLNS. OF NIO-MGO WITH 1-10 MOL. PERCENT NIO WERE HARDENED AT 900, 1100, AND 1300DEGREESC, ANALYZED . CHEM. AND BY X RAY DIFFRACTION. THE SUSCEPTIBILITY WAS MEASURED BY THE FARADAY METHOD AT 78-450DEGREESK WITHIN 9100-13,500 OE. THE SHAPES OF THE CHINI PRIMEPARA ISOTHERMS FOR ALL HARDENING TEMPS. ARE PRACTICALLY IDENTICAL. THE ISOTHERMS DECREASE SLOWLY AT 1-5 MOLE PERCENT NIO, AND RAPIDLY STARTING AT 5 MOLE PERCENT NIO.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--SUSCEPTIBILITY OF SR SUB2 COSBO SUB6 AND SOLID SOLUTIONS OF SR SUB2  
COSBO SUB6 IN SR SUB2 ALSBO SUB6 -U-  
AUTHOR--ARIYA, S.M., CHEZHINA, N.V., BORISOVA, N.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 267-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MAGNETIC SUSCEPTIBILITY, SOLID SOLUTION, COBALT COMPOUND,  
MAGNESIUM OXIDE, STRONTIUM COMPOUND, CRYSTAL STRUCTURE, THERMAL EFFECT,  
ANTIMONY COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/0683 STEP NO--UR/0076/70/044/001/0267/0268  
CIRC ACCESSION NO--AP0105659  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SUSCEPTIBILITY OF TRIVALENT CO IN SR SUB2 COSBO SUB6 DISSOLVED IN DIAMAGNETIC SR SUB2 ALSO SUB6 WAS SOUGHT. SOLID SOLNS. CONTG. 3, 5, AND 10PERCENT SR SUB2 COSBO SUB6 WERE SYNTHESIZED WITH A STRUCTURE OF DISORDERED PEROVSKITE. A STUDY OF THE 1-CHICO PRIMEPARA DEPENDENCE ON TEMP. (77, 133, 295DEGREEK) SHOWED THAT ALL COMPOS. OBEY THE CURIE WEISS LAW. VALUES OF THE EFFECTIVE MAGNETIC MOMENT,  $\mu$  SUBEFF, SHOW NOTICEABLE SCATTERING, BUT WITHIN 5.8-9.5 MUB, WHEN APPROX. EXTRAPOLATED TO ZERO CO CONCN. A DEPENDENCE OF CHI ON THE COMPN. OF SOLID SOLNS. IS TYPICAL FOR DIL. ANTIFERROMAGNETS, AS OPPOSED TO BIVALENT CO IN COO-MGO. FOR PURE SR SUB2 COSBO SUB6,  $\mu$  SUBEFF EQUALS 4.47 MUB.

UNCLASSIFIED

USSR

UDC: 538.69:539.124

ARIYA, S. M., VINTRUFF, V., LUKINYKH, N. L.

"EPR Spectra of MnO-MgO, CoO-MgO, and NiO-MgO Solid Solutions"

Vestn. Leningr. Un-Ta [Herald of Leningrad University], No 22, 1969, pp 87-91  
(translated from Referativnyy Zhurnal Fizika, No 7, 1970, Abstract No 7D574,  
unsigned)

Translation: EPR studies of the solid solutions MnO-MgO (I), CoO-MgO (II), and NiO-MgO (III) of various compositions are performed at room temperature and at liquid nitrogen temperature. The EPR spectra of all specimens of I consist of a single intensive line with  $g = 2.0017 \pm 0.0005$ . In the specimen with minimum concentration of Mn( $\text{Mn}_{0.009}\text{Mg}_{0.991}\text{O}$ ) a hyperfine structure sextet with constant  $A = (86 \pm 1) \text{ e}$  was observed. The spectra of specimens II at 77°K contain only one broad line with  $g = 4.324 \pm 0.002$ . The spectra of specimens of III contain one line with  $g = 2.225 \pm 0.001$ . In I, a correlation was determined between the number of paramagnetic centers and the paramagnetic component of static susceptibility. In the case of II and III, this correlation was not observed; this is attributed to the formation in II and III of aggregates of Co and Ni atoms bonded by exchange interaction, leading to a decrease in the effective number of paramagnetic centers. Studies of the form of the lines indicate the correctness of the assumption of the formation of aggregates of Co and Ni atoms in II and III respectively.

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USSR

UDC 532.526

ARIYE, M. Ya., KOZLOV, L. F.

"Experimental Study of Turbulent Boundary Layer with Suction"

Moscow, Gidromekhanika, No 17, 1971, p 40-44.

Abstract: A description is presented of an installation for experimental study of a turbulent boundary layer with suction and results of the investigations are presented. The influence of evenly distributed suction over a velocity profile and the characteristics of a turbulent boundary layer are shown. Based on a comparison of the characteristics of the turbulent boundary layer over an impermeable plate with analogous characteristics with suction, a formula is concluded for determination of the ratio of local surface friction coefficients on a flat plate with and without suction.

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USSR

UDC 616.992-031.81-036.12

PETRUNINA, M. P., Candidate of Medical Sciences, ~~ARIYEVICH, A. M., Professor,~~  
MALKINA, A. Ya., Candidate of Biological Sciences, and KUNEL'SKAYA, V. Ya.,  
Candidate of Medical Sciences, Diagnostic Department of the Moscow Institute  
of Tuberculosis, Institute of Medical Parasitology and Tropical Throat Insti-  
tute of the Ministry of Health RSFSR, Moscow

"Chronic Disseminated Histoplasmosis"

Moscow, Klinicheskaya Meditsina, Vol 49, No 11, 1971, pp 148-150

Abstract: A 21-year old female student developed an acute disease involving headache, high fever, and rhinitis. The diagnosis of left maxillary sinusitis was established, and sinusotomy was performed in November 1967. In March 1968, the patient's persistent headache became more severe and aggravated by cough with mucous, pussy, hemorrhagic phlegm. On the basis of clinical observations and X-ray examinations, the diagnosis of infiltrative pneumonic tuberculosis was established, although tuberculosis mycobacteria were not isolated. Administration of streptomycin, tubazid, and PAS was discontinued after a month because of coating and erosion of the tongue and gums. Smears of these organs revealed Candida fungus, and the diagnosis of candidomycosis of the lungs and the mouth was established. Administration of nystatin and levorin improved

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PETRUNINA, M. P., et al., Klinicheskaya Meditsina, Vol 49, No 11, 1971, pp 148-150

the patient's overall condition but not that of her lungs. In September 1968, she was hospitalized with sharp pain in the left thorax, cough, and headache, but normal digestion, skin, normal visible mucous membranes, and lymph nodes. X-rays revealed dark areas in the lower portions of the lungs and a moderate opacity of maxillary and frontal sinuses. Subatrophy and hemorrhages were observed in the nasal mucosa. Blood sedimentation rate was 57 mm/hr. No pathogens of systemic mycoses were found in bronchial and sinus wash fluid. However, after sternal puncture, Histoplasma cells were observed in the protoplasm of bone marrow cells. After a 3-week long administration of mystatin, with 5,000,000 units per day, the opaque structure in the left lung was replaced with fibrous tissue. By that time, the patient's headache became intolerable, her maxillary sinuses were uniformly darkened and her nasal mucosa was hyperemic, superficially ulcerated, and covered with an exudate. Puncture of the right maxillary sinus yielded a considerable quantity of grayish-white pus. A sample of that pus was treated with tetracycline and injected intraperitoneally into nine mice. Subsequent necropsy revealed enlargement of the spleen in all animals and the presence of large numbers of Histoplasma capsulatum cells inside reticular tissue cells. Administration

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PETRUNINA, M. P., et al., Klinicheskaya Meditsina, Vol 49, No 11, 1971, pp 148-150

of amphotericin B (a total of 2,000,000 units) brought no improvement. After a second treatment with nystatin (a total of 60,000,000 units), the dark area in the right lung also changed into fibrous tissue. In June 1969, surgery was performed on the maxillary sinuses: the considerably thickened, hyperplastic, granulated mucosa of the sinuses was removed, and passages communicating with the nasal cavity were created. Histoplasma capsulatum was found in the excised mucosa. After the surgery, the patient's condition significantly improved and remained satisfactory throughout the year of observation.

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MEDICINE

Diagnosis

USSR

UDC 616.992.282-031:611.24

CHAYSOVSKAYA, M. M. and ARIYEVICH, A. M., Chair of Tuberculosis, Central Institute for the Advanced Training of Physicians, Moscow

"Symptoms and Diagnosis of Pulmonary Coccidioidomycosis"

Moscow, Klinicheskaya Meditsina, No 12, 1971, pp 52-55

Abstract: The author observed five coccidioidomycosis patients, three with the primary pulmonary form, two with the disseminated or generalized form. Although complicated by the resemblance to tuberculosis, the diagnosis of the disease was based on the absence of M. tuberculosis in the sputum and negative tuberculin test, comparatively satisfactory condition and normal temperature of the patients, inflammatory changes in the middle and lower lobes of the lungs visualized on X-rays, isolation of Coccidioides immitis from sputum or irrigation fluid from the bronchi, positive complement fixation, agglutination, precipitation, and coccidioidin reactions, and therapeutic response to fungistatic agents, especially the antibiotics amphotericin B and nystatin. Coccidioidomycosis is more common in the Soviet Union than is generally believed, especially the generalized form. An excerpt from the case history of a patient with primary pulmonary coccidioidomycosis is the first such history to appear in the Soviet literature.

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USSR

UDC 616.992.282-036.1(47)

~~ARIYEVICH, A. M.~~, Professor, MINSKER, O. B., Candidate of Medical Sciences,  
and ~~PINZUR, G. S.~~, Department of Systemic Mycoses, Institute of Medical  
Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Moscow

"Clinical Aspects of Coccidioidomycosis in the USSR"

Moscow, Sovetskaya Meditsina, No 6, Jun 71, pp 24-29

Abstract: Since 1951 more than 120 cases of coccidioidomycosis have been recorded in the USSR. Some of them originated in northern regions. During 1966-70, 61 patients with coccidioidomycosis were observed at the authors' institute, among them 44 men and 17 women. The duration of the infection with *Coccidioides immitis* was 5-25 yrs or longer. Constant contact with the soil was established in only 36 cases, but occasional contact that resulted in infection could be assumed in the remaining cases. There were two cases of residual pulmonary coccidioidomycosis and 59 cases of the disseminated (systemic) form of the disease. In 48 cases the subcutaneous cellular tissue and the skin were predominantly affected, while 12 patients coccidioidomycosis of the lungs. X-ray examinations disclosed remainders of the primary pulmonary infection in 28 of the group of 48 patients. In 23 cases coccidioidomycosis was combined with actinomycosis. In the treatment of the patients an anti-

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ARIYEVICH, A. M., et al., Sovetskaya Meditsina, Vol 34, No 6, Jun 71, pp 24-29

bacterial antibiotic was applied for 7-10 days, which was selected depending on the bacterial flora present. This was followed by alternating administration of sulfadimezin and nystatin. In cases in which actinomycosis was present, injections of actinolysate were carried out. Vitamins were administered and, if necessary, drugs with antihistamine activity. In severe cases blood transfusions were carried out. During the past two years, surgery was applied to an increasing extent. Intravenous drop-by-drop infusions of the antifungus antibiotic amphoterecin B proved to be of advantage.

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USSR

UDC 911.3.616.928.6(47+57)

ARIYEVICH, A. M., STEPANISHCHEVA, Z. G., LYSENKO, A. Ya., MALKINA, A. Ya.,  
AGARUNOVA, Yu. S., DARCHENKOVA, N. N., BARKOV, V. N., and MINSKER, O. B.

"Three-Year Study of Histoplasmosis in the USSR"

V. sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med.  
parazitol. i trop. med. (Proceedings of the Scientific Conference Com-  
memorating the 50th Anniversary of the Institute of Medical Parasitology  
and Tropical Medicine -- collection of works), Moscow, 1970, pp 61-63  
(from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.124)

Translation: A total of 31 cases of histoplasmosis were recorded in the  
USSR by the beginning of 1970. Of these, 24 were in Western Siberia. A  
total of 690 soil specimens were examined, gathered from sites where histo-  
plasmosis was recorded (Tyumenskaya oblast, Turkmen SSR and others) and from  
sites having no cases (Armenian SSR and the environs of Moscow). The agent  
of histoplasmosis was isolated from soil of the Turkmen SSR. In one out of  
50 house mice (in Turkmen SSR) signs were found of histoplasmosis. Skin  
tests (176 in Tyumen oblast and 591 in Turkmenia) were made yielding posi-  
tive results in 2% and 5.6% of the cases studied, respectively.

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USSR

UDC: 621.378

ARKAD'YEV, D. I., MILINKIS, B. M., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Optoelectronics"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 12-20

Abstract: The article is a survey of devices based on optoelectronics, i.e. the use of electromagnetic oscillations in the optical range, including U-V and I-R, to make connections between elements in information systems. The discovery of the laser effect was historically the main driving force behind the development of optoelectronics. Considerable space is devoted to the laser principle and various types of lasers with their basic characteristics. Modulators for controlling the phase, frequency, amplitude and polarization of a light beam are discussed. Electromechanical, ultrasonic and electro-optical methods of laser beam deflection are explained. Devices for registration of optical signals are considered and the principles of fiber optics are outlined. A bright future is seen for optoelectronics in view of the recent development of holography, large laser television screens, techniques for communication between spacecraft in deep space, and devices based on nonlinear optics.

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Lasers and Masers

USSR

UDC: 621.373.029.67

~~ARKADIYEV~~, D. I., KAMACH, Yu. E., KOZLOVSKIY, Ye. N., OVCHINNIKOV, V. M., and SHAMBUROV, V. A.

"Monopulse Ruby and Neodymium-Glass Laser"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 523-528

Abstract: This article describes a laser designed by the authors to correct defects in an earlier laser developed by some of the men named above and described in the Russian Journal of Applied Spectroscopy ("Laser with Neodymium Glass Electro-Optical Q Modulator," 1967, Vol. 7, No. 2, p. 269). This earlier laser used a half-wave electro-optical gate with a KDP crystal between crossed polarized prisms of Iceland spar. The presence of a second polarizer in the laser introduced additional absorption and dispersion losses in the Iceland spar, and the half-wave voltage for controlling the gate for neodymium glass was as much as 18-20 kv. The new laser uses ruby and neodymium glass

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USSR

ARKAD'YEV, D. I., et al, Radiotekhnika i Elektronika, Vol 15,  
No 3, 1970, pp 523-528

Abstract:

as well as a quarter-wave electro-optical gate. A diagram of the new type of laser is shown. It consists of a special prism for full internal reflection, the electro-optical crystal polarized by a Glan prism, the ruby with sapphire ends, and stopping plates. Curves for the device giving the output energy as a function of the delay in application of the voltage to the gate for the ruby and the neodymium glass are shown; there are also curves for the output energy as a function of the voltage applied to the gate and of the pumping energy. The authors express their gratitude to A. M. Prokhorov for his valuable comments on the article.

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USSR

UDC 8.74

ARKAD'YEV, S. A., SMOYLOVSKAYA, N. G.

"Problem of Time-Sharing Programs"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Engineering in Machine Building. Scientific and Technical Collection), 1970, dec, pp 115-119 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V606)

Translation: One of the methods of dividing a large program into a series of independent programs is described.

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Acc. Nr.

AP0105538

Abstracting Service:  
CHEMICAL ABST.

Ref. Code

ARKADYEVA 4R0449  
E.N.

[126931] Optical absorption in relation to lattice defects in cadmium telluride crystals. Agrinskaya, N. V.; Arkad'eva, E. N.; Matveev, O. A. (Fiz.-Tekh. Inst. im. Lofie, Leningrad, USSR). *Fiz. Tekh. Poluprov.* 1970, 4(2), 370-2 (Russ). The transmittance of CdTe crystals was measured in the region 0.8-1.6  $\mu$  at 77 and 300°K. Four groups of crystals were studied. The 1st 3 groups had different position of Fermi level: (1)  $p$ -type,  $E_f = E_v + (0.15-0.35)$  eV, (2)  $p$ -type,  $E_f = E_v + (0.55-0.60)$  eV, and (3)  $n$ -type,  $E_f = E_c - (0.6-0.7)$  eV. The 4th group included  $n$ -type crystals compensated by annealing in Te vapor with energy level  $E_d \sim E_v - 0.01$  eV. The curves of the spectral dependence of absorption coeff. are analyzed in terms of energy levels assocd. with estd. electron transitions, and the nature of relevant centers is discussed. The centers with  $E_v - (0.6-0.7)$  eV level are assumed to be due to double-neg. charged Cd vacancies  $V_{Ca}''$ . The centers with  $E_v + 0.55$  eV level may be connected with donor-type defects which are introduced simultaneously with acceptors and compensated them. The centers with  $E_v + (0.15-0.16)$  eV level are ascribed to the  $V_{Ca}''$  defects or  $(V_{Ca}-In)'$  complexes.  
L. Koudelka

REEL/FRAME

19880553

CLB

13

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF HETEROGENEITIES ON THE MOBILITY OF ELECTONS IN CADMIUM  
TELLURIDE -U-  
AUTHOR-(03)-ALEKSEYENKO, M.V., ARKADYEVA, YE.N., MATVEYEV, O.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 414-16  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CADMIUM TELLURIDE, ELECTRON MOBILITY, CRYSTAL DEFECT, IMPURITY  
LEVEL, PARTICLE DISTRIBUTION, FERMI LEVEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/0092 STEP NO--UR/0449/70/004/00Z/0414/0416  
CIRC ACCESSION NO--AP0105178  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--2300770

CIRC ACCESSION NO--AP0105178

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL TREATMENT IS PRESENTED OF THE TEMP. DEPENDENCES OF THE MOBILITIES IN N COTE, TAKING INTO ACCOUNT THE EFFECT OF HETEROGENEITIES. AN ANAL. OF THE RESULTS SHOWS THAT IN A SUFFICIENTLY LOW OHMIC SAMPLE, THE FRACTION OF THE VOL. OCCUPIED BY HETEROGENEITIES IS SMALL, BUT THE DISTANCE BETWEEN THEM IS COMPARABLE TO THE ELECTRON MEAN FREE PATH. IN A MORE PRECISELY COMPENSATED SAMPLE, THE VOL. OCCUPIED BY THE HETEROGENEITIES IS GREATER, THE DISTANCE BETWEEN THEM IS GREAT AND THE SCATTERING ON THEM IS LESS SIGNIFICANT. THE MOBILITY IN THIS CASE INCREASES WITH AN INCREASE IN TEMP. IN SUCH A SAMPLE, A RECOMPENSATED AREA MAY EXIST IN WHICH THE FERMI LEVEL LIES SIMILAR TO 0.6 EV FROM THE CONDUCTION BAND. ON THE BOUNDARY OF THESE REGIONS, AN ELEC. FIELD BARRIER IS FORMED, TENS OF EV IN MAGNITUDE. AS THE DEGREE OF COMPENSATION INCREASES, THE PROBABILITY OF THE FORMATION OF SUCH OHMIC REGIONS INCREASES AND, AS A RULE, THE MOBILITY AT ROOM TEMP. IS LOW. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 018  
UNCLASSIFIED  
PROCESSING DATE--09OCT70  
TITLE--QUASI ELASTIC SCATTERING OF HIGH ENERGY ELECTRONS ON NUCLEONS OF  
CARBON 12 AND SILICON 28 -U-  
AUTHOR--(05)-DEMENTIY, S.V., AFANASYEV, N.G., ARKATOV, I.M., VLASENKO,  
V.G., GOLDSHTEYN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(1), 19-28  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ELECTRON SCATTERING, INELASTIC SCATTERING, CARBON ISOTOPE,  
SILICON ISOTOPE, CHERENKOV SCATTERING, HIGH ENERGY PARTICLE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1980/0175  
STEP NO--UR/0367/70/011/001/0019/0028  
CIRC ACCESSION NO--AP0048467  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0048467

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF THE MEASUREMENTS OF THE INELASTIC SCATTERING OF 690-, 970-, AND 1115-MEV E ON PRIME12 C AND PRIME28 SI NUCLEI AT 16-40DEGREES ARE PRESENTED. THE SCATTERED E WERE DETECTED BY MEANS OF CHERENKOV COUNTER, THE CONSTRUCTION OF WHICH IS DESCRIBED. NO CORRECTION FOR THE INFLUENCE OF PRIME13 C AND PRIME29,30 SI CONTENT IN THE TARGETS OF NATURAL C (4.97 TIMES 10 PRIME22 NUCLEI-CM PRIME2) AND OF NATURAL SI (1.51 TIMES 10 PRIME12 NUCLEI-CM PRIME2) UPON THE CROSS SECTIONS VALUES WAS MADE BECAUSE OF THEIR LITTLE INFLUENCE. THE GAINED RESULTS WERE ANALYZED BY USING THE THEORY OF THE QUASI ELASTIC SCATTERING. IN ORDER TO MAKE THE PRESENT RESULTS COMPATIBLE WITH THE ELASTIC E SCATTERING ON THE SAME NUCLEI, IT IS NECESSARY TO ACCOUNT FOR INEQUALITY OF POTENTIALS IN DIFFERENT NUCLEAR SHELLS AS WELL AS THE DYNAMICAL CORRELATIONS OF N IN NUCLEI. FACILITY:  
FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--FINE STRUCTURE OF THE GIANT PULSE IN A CO2 LASER WITH TRANSVERSE  
MODES -U-  
AUTHOR-(03)-ARKELIAN, V.S., KARLOV, N.V., PROKHOROV, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 849-851  
DATE PUBLISHED----APR70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CARBON DIOXIDE LASER, LASER PULSE, LASER Q SWITCHING  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1672 STEP NO--UR/0109/70/015/000/0849/0851  
CIRC ACCESSION NO--AP0118650  
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF EXPERIMENTS IN WHICH GIANT PULSES COMPOSED OF TRAINS OF MUCH SHORTER PULSES WERE OBTAINED IN A CARBON DIOXIDE LASER WITH MORE THAN ONE TRANSVERSE MODE. THE RESONATOR LENGTH WAS ONLY 160 CM WHICH PRECLUDED THE SIMULTANEOUS EMISSION OF SEVERAL LONGITUDINAL MODES. IT IS SHOWN THAT THE COMPETITION OF TRANSVERSE MODES RESULTS IN SEQUENCES OF SHORT PULSES DURING PASSIVE, ACTIVE, AND COMBINED PASSIVE AND ACTIVE Q SWITCHING. THE CHARACTERISTICS OF THE PULSE TRAINS DIFFER FOR EACH TYPE OF Q SWITCHING. FACILTIY: AKADEMIIA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC:669.245'71.017.3

LITVINOV, V. S., BOGACHEV, I. N., ARKHANGEL'SKAYA, A. A., PANTSYREVA, Ye. G.,  
Ural Polytechnic Institute imeni Kirov  
"Electron Microscope Investigation of Nickel-Aluminum Alloy Martensite"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973,  
pp 388-393

Abstract: The structure of the alloy 64 at.% Ni + 36 at.% Al, in which martensite conversion has occurred upon cooling from high temperatures (1200°C) at rates preventing separation of excess nickel, is studied by an electron-microscope method. It is shown that the martensite needles consist of thin plates in twin orientation in relation to each other with twinning planes in the set {101}. A  $\beta$ -phase shear plan is suggested, leading to the formation of such a martensite structure.

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USSR

UDC 669.245'71.017.3

ARKHANGEL'SKAYA, A. A., BOGACHEV, I. N., LITVINOV, V. S., and PANTSYREVA, Ye. G., Ural Polytechnic Institute imeni S. M. Kirov

"Phase Transformations in Nickel-Aluminum Alloys With Cesium Chloride Lattice"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 541-546

Abstract: A study was made by metallographic, dilatometric, and roentgenostructural methods of the effects of the degree of nickel supersaturation on phase transformations during heating in substitutional Ni-Al-base solid solutions. The diffusionless transformation of a part of martensite into the  $\beta$ -phase in alloys with 65 and 66 at% Ni is accompanied by a separation of  $\text{Ni}_3\text{Al}$  dispersion particles. At the same time, a reduction of the specific volume of martensite and  $\beta$ -phase takes place. The transformation in the 240-360 deg. temperature interval results in intense hardening of the alloy: its microhardness increases up to 900 kg/mm<sup>2</sup>. Analogous effects are observed for the 64% Ni-2% Co-34% Al and 64% Ni-2% Fe-34% Al ternary alloys. It is supposed that volumetric changes accompanying the formation of martensite and its transformation during heating must affect the properties

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ARKHANGEL'SKAYA, A. A., et al., Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 541-546

of coatings, particularly during repeated heating and cooling, develop microcracks in the protective coating, decay the heat-resistant oxide film, and intensify the diffusion processes in the coating. Three figures, one table, five bibliographic references.

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A Public Health, Hygiene and Sanitation

USSR

UDC 614.73:[621.311.25:621.039

ARKHANGEL'SKAYA, I. G., TSUKANOV, I. F., VERBITSKIY, B. V., and RYAKHOVSKIY, A. V.,  
Institute of Biophysics, Moscow

"Characteristics of Radioactive Aerosols in the Atmosphere of Premises of the  
Novo-Voronezh Atomic Electric Power Station"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Translation: One of the possible factors of the effect of the industrial environment on personnel employed at the atomic electric power station (APS) is the contamination of premises with radioactive aerosols. We determined the concentration of these aerosols in air in the principal industrial premises during various periods of work at the Novo-Voronezh APS, studying the isotope composition of the aerosols, and the doses emitted by them in critical organs of service personnel. To determine the aerosol contents, air samples were collected on filters made of FPP fabric, followed by radiometric determination on the DP-100 apparatus, with the SI-25 counter. The amount of aerosols was calculated by the known method. About 500 samples were collected.

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolyevaniya,  
No 3, Mar 70, pp 41-43

Table 1

Concentration of long lived  $\beta$ -active aerosols in the atmosphere of the APS premises

	Concentration ( $n \cdot 10^{-13}$ curie/l)	
	Energy conditions	Stopped reactor
Continuously used premises .....	2-7	1.2-4.2
Periodically used premises .....	4-5.2	1.2-2.3
Unused premises .....		1.2-15

The concentrations and isotope composition of aerosols varied. None of the premises tested showed aerosol concentrations exceeding the acceptable air limits for work premises during the test period.

Table 1 shows the content of long lived  $\beta$ -active aerosols in the air of production premises.

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Analysis of the decomposition curves of aerosol samples showed that in 95-99% of all cases, they consisted of relatively short-lived isotopes with  $T_{eff} = 20-25$  min. Only 1-5% of the activity corresponded to the fraction of the long-lived component (the filters were read after 24 hrs of storage).

The isotope composition of aerosols was determined radiochemically and by means of  $\gamma$ -spectrometry. It was determined that the relatively short-lived aerosols consist primarily of  $Rb^{88}$  and  $Cs^{137}$  (up to 70%). In addition, this short-lived fraction contains rare earth elements (up to 17%) and barium group elements (about 7%). Thus, the dominant input into the activity of the short-lived component is due to  $Rb^{88}$  -- a product of the breakdown of "fission" gas  $Kr^{88}$ .

The long-lived fraction of aerosols consists mainly of elements of induced activity of the heat carriers such as:  $Fe^{59}$ ,  $Zr^{95}$ ,  $Zr^{97}$  and  $Co^{60}$  (V. M. Kozlov and co-authors).

The levels due to the activity of individual isotopes during normal utilization of the APS, with consideration for repairs, were calculated (N. G. Gusyev) and 3/7

USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

reported in units of maximum permissible load (MPL) per organ in question. According to data from the International Commission on Radiological Protection, the exposure period in all calculations was considered to be one hr. All reports on dose levels are this time period. Lungs were selected as the critical organ for dose calculation of relatively short-lived components.

The average annual concentration of short-lived aerosols reaches  $10^{-11}$  curie/l, and the average annual concentration of the long-lived ones --  $5 \cdot 10^{-13}$  curie/l. Tables 2 and 3 show the concentrations and dose levels in critical organs due to the relatively short-lived and long-lived components of the aerosols, respectively. It follows from these data that the dose levels in critical organs were not high, amounting to hundredths of MPL. Due to the fact that personnel servicing the station use individual protective masks during work to safeguard the breathing organs, the actual levels should be even lower.

Thus the concentrations of aerosols and the doses of internal irradiation of service personnel were for all practical purposes considerably lower than the maximum permissible level during various work periods at the station.

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Table 2

Concentration (curie/l) of individual short-lived aerosol components and their dose in critical organs.

Isotope	Concentration	Dose load (in units of maximum permissible load)	Critical organ
Rb <sup>88</sup>	$3.9 \cdot 10^{-12}$	$3.9 \cdot 10^{-3}$	Lungs
Rb <sup>89</sup>	$5 \cdot 10^{-15}$	$6.3 \cdot 10^{-8}$	Lungs
		$1.6 \cdot 10^{-4}$	Bones
Fe <sup>131</sup>	$1 \cdot 10^{-13}$	$3.4 \cdot 10^{-6}$	Lungs
		$1.1 \cdot 10^{-2}$	Thyroid gland
Cs <sup>138</sup>	$3.3 \cdot 10^{-12}$	$3.3 \cdot 10^{-3}$	Lungs
Ba <sup>141</sup>	$3 \cdot 10^{-13}$	$6.6 \cdot 10^{-5}$	Lungs
Ba <sup>142</sup>	$5.6 \cdot 10^{-13}$	$1.9 \cdot 10^{-4}$	Lungs
RE elements	$1.7 \cdot 10^{-12}$	$3.6 \cdot 10^{-5}$	Lungs

Note. Rubidium and caesium MPC is  $10^{-9}$  curie/l; MPC of other elements is not available.

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Table 3  
Concentration (curie/l) of individual long-lived aerosol components and their accumulation in critical organs.

Isotope	Concnetration	MPC	Dose accumulation (in MPC units)	Critical organ
Cr <sup>51</sup>	$1 \cdot 10^{-14}$	$2 \cdot 10^{-9}$	$5 \cdot 10^{-6}$	Lungs
Fe <sup>59</sup>	$7 \cdot 10^{-14}$	$3 \cdot 10^{-11}$	$2.4 \cdot 10^{-3}$	Spleen
Co <sup>60</sup>	$5 \cdot 10^{-15}$	$9 \cdot 10^{-12}$	$5.6 \cdot 10^{-4}$	Lungs
Sr <sup>89</sup>	$5 \cdot 10^{-15}$	$3 \cdot 10^{-11}$	$1.7 \cdot 10^{-4}$	Bones
Y <sup>91</sup>	$1 \cdot 10^{-14}$	$8 \cdot 10^{-9}$	$1.3 \cdot 10^{-6}$	Lungs
Zr <sup>95</sup>	$1.1 \cdot 10^{-13}$	$1 \cdot 10^{-9}$	$1.1 \cdot 10^{-4}$	Lungs
Zr <sup>97</sup>	$5 \cdot 10^{-15}$	$9 \cdot 10^{-11}$	$5.6 \cdot 10^{-5}$	Lungs
Ru <sup>106</sup>	$5 \cdot 10^{-15}$	$6 \cdot 10^{-12}$	$8.4 \cdot 10^{-4}$	Lungs
Cs <sup>137</sup>	$1 \cdot 10^{-14}$	$1 \cdot 10^{-11}$	$1.0 \cdot 10^{-3}$	Lungs
La <sup>140</sup>	$5 \cdot 10^{-15}$	$1 \cdot 10^{-10}$	$5 \cdot 10^{-5}$	Gastro-intestinal tract
Ce <sup>144</sup>	$1 \cdot 10^{-14}$	$6 \cdot 10^{-12}$	$1.7 \cdot 10^{-3}$	Lungs

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= 95 =



USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

The levels of contamination of the atmosphere in production premises may be lowered substantially by improving the quality of cleaning of heat carriers from radioactive products, by improving the hermetic sealing of the units, so that the dose of internal irradiation for service personnel at APS may be brought to the minimum.

LITERATURE

GUSYEV, N. G., Maximum permissible levels of ionizing radiation. M., 1961.

GUSYEV, N. G., (Edit) et al, Dosimetric and radiometric methods. M., 1966.

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--OSCILLOPOLAROGRAPHY OF PYRIMIDO TRIAZOLES IN THE PRESENCE OF METAL  
IONS AS INDICATORS -U-  
AUTHOR-(02)-GORODHOVSKAYA, V.I., ARKHANGELSKAYA, YE.D.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25-1, 166-71  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL ANALYSIS, ORGANIC AZOLE COMPOUND, COPPER, PYRIMIDINE,  
AMINE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1993/0711 STEP NO--UR/0075/70/025/001/0166/0171  
CIRC ACCESSION NO--AP0113575  
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70  
CIRC ACCESSION NO--AP0113575  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VOLTAMMETRIC OSCILLOPOLAROGRAPHY  
OF 5 METHYL 5 TRIAZOLO (1,5-A) PYRIMIDIN -7 (4H) ONE, 7 METHYL 5  
TRIAZOLO (4,3 A) PYRIMIDIN 5(8H) ONE AND 5 METHYL 5 TRIAZOLO (1,5,A)  
PYRIMIDINE-7(4H THIONE WITH HG ELECTRODE WAS STUDIED. THE OXY DERIVS.  
CAN BE DETD. BY THE ABSORPTION PEAK OF THE COMPLEX FORMED WITH CU(II),  
OR BY THE PEAK OF THE ETTRAAMINE CUPRIC COMPLEX IN A SPECIALLY PREPD.  
MIXT. OF THE TEST SUBSTANCE SOLN. AND THE STD. SOLN. OF CU(II)  
INDICATING IONS. THE FORMER METHOD IS MORE SENSITIVE. THE HEIGHT OF  
THE OSCILLOGRAPHIC PEAKS DEPENDS ON THE CONCN. OF METAL IONS AND ON THE  
SUBSTANCE WITH WHICH THEY REACT. FACILITY: KAZAN CHEM. TECHNOL.  
INST. , KAZAN, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EFFECT OF THE POROUS STRUCTURE OF A ZINC ELECTRODE ON ITS  
ELECTRICAL CHARACTERISTICS -U-  
AUTHOR--(G3)-RESHETOVA, G.N., AFANASYEVA, L.A., ARKHANGELSKAYA, Z.P.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 843-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--POROSITY, ZINC, METAL ELECTRODE, ELECTRIC PROPERTY, SURFACE  
AREA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/1946 STEP NO--UR/0080/70/043/004/0843/0847  
CIRC ACCESSION NO--AP0152207  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZN ELECTRODES PREPD. BY DEPOSITION FROM ZINCATE SOLNS. CNTD A POROUS CU SUBSTRATE HAVING A D. OF 1-3 G-CM. PRIME3 WERE DISCHARGED BETWEEN 2 AGG COUNTER ELECTRODES IN 10N KOH (VOL. EQUALS 2 ML-G ACTIVE ZN). ELECTRODES HAVING A TRUE SURFACE AREA OF 8.5 M PRIME2-G HAD A POROSITY P EQUALS 70PERCENT; ELECTRODES WITH AN AREA EQUALS 0.4 M PRIME2-G HAD P EQUALS 30PERCENT. OPTIMUM ELECTROCHEM. CHARACTERISTICS (DURATION OF DISCHARGE AT CONST. VOLTAGE) OCCURRED FOR ELECTRODES WHOSE P EQUALS 60-65PERCENT; THESE ELECTRODES HAD D. 1.2-1.8 G-CM PRIME2. AT 30 A-DM PRIME2 AND 25DEGREES, THESE ELECTRODES HAD A UTILIZATION COEFF. OF 75PERCENT, WHEREAS ELECTRODES HAVING P EQUALS 30PERCENT, THE UTILIZATION WAS ONLY 20PERCENT. INCREASING THE DISCHARGE TEMP. INCREASED THE UTILIZATION.

UNCLASSIFIED

USSR

UDC 621.355.8.035.2

SHURVALOVA, I. N., GEDOROVA, T. V., and ARKHANGEL'SKAYA, Z. P.,

"Anode Process on a Silver-Oxygen Electrode of Silver Cadmium Batteries"

Sb. rabot no khim. istochnikam toka. Vses. n.-n akkumulyator in-t (Collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 171-174 (from Referativnyy Zhurnal --- Khimiya, No 3(II), 1973, Abstract No 8L242)

Translation: A study was made of the features of the anode process on a AgO electrode, prepared from the application of active materials of different sizes. For a large depth of oxidation the fine grained active part in the first potential step of the discharge into the electrode in the second step results in the increase in the potential and is accompanied by the evolution of small amounts of  $O_2$ . By measuring the increase in the work time, basic and secondary processes may be separated.

USSR

UDC 621.355.8

SHUVALOVA, I. N., FEDOROVA, T. V., and ARKHANGEL'SKAYA, Z. P.,

"The Principles of Decreasing the Capacity of the Silver-Oxygen Electrode for Linear Reversible Operations"

Sb. rabot no khim. istochnikam toka. Vses. n.-n akkumulyator. in-t (collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 175-181 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L244 by V. S. Levinson)

Translation: A study was made of the reasons for the deterioration in the efficiency of the AgO electrode prepared from different active materials (industrial silver powder, Ag<sub>2</sub>O fine grained material, and silver powder with traces of ZrO<sub>2</sub>) for a linear cycling in silver-cadmium batteries. A decrease in the coefficient of the utilization of the active areas according to the size of the increase in the operation time of the electrode is related to the deterioration of the discharging area as a result of its aggregation. A high frequency of linear operation characteristics and battery conditions are retained by the electrode made from Ag<sub>2</sub>O.

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USSR

UDC 535.37

ARKHANGEL'SKIY, G. Ye., GORBACHEVA, N. A., FOK, M. V.

"Influence of Lattice Structure on Luminescence and Electron Paramagnetic Resonance of Europium-Activated Zinc Sulfide"

Moscow, Zhurnal Prikladnoy Spektroskopii, Vol 19, No 3, Sep 73, pp 460-463

Abstract: It is shown that the emission spectrum of europium in cubic and hexagonal ZnS-Eu consists of four elementary bands, two of which ( $h\nu_{\max}=1.75$  and  $1.90$  ev) occur in the spectrum of both phases. Investigation of the EPR spectra showed that europium is in the bivalent state and that a high concentration of the dopant favors formation of the cubic modification of zinc sulfide. The variation, with concentration, is found for the intensity ratio of bands  $h\nu_{\max}=1.75$  and  $1.90$  ev in the hexagonal and cubic phases. The authors thank A. F. Nalgranyan, L. M. Tsyganova, and A. G. Glyadelkina for assisting in the work.

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USSR

UDC: 548.31

ARKHANGEL'SKIY, G. Ye., VOZNESENSKAYA, T. I., FOK, M. V., Physics Institute,  
Academy of Sciences of the USSR

"Effect of Manganese on the Cubic-to Hexagonal Lattice Transformation in Zinc Sulfide"

Moscow, Kristallografiya, Vol 18, No 3, May/Jun 73, pp 544-547

Abstract: The authors investigate the effect of manganese on the formation of the hexagonal phase in performed cubic crystals of zinc sulfide. The amount of a given phase was determined by comparing the intensities of EPR spectra of the  $Mn^{2+}$  ion which isomorphically replaces the zinc ions typical for the hexagonal and cubic environments. In the main experiments, the mean concentration of manganese was  $10^{-4}$  gram atom per gram molecule of  $ZnS$ . It was found that the hexagonal phase forms on the surface as the specimen is melted at  $1170^{\circ}C$ . To determine the part played by manganese in formation of the hexagonal layer, similar experiments were conducted with a different manganese concentrations. It was found that the fraction of hexagonal phase decreases when the Mn concentration is reduced to  $10^{-7}$  gram atom per gram molecule of  $ZnS$ . This indicates that manganese plays an active part in the cubic-to-hexagonal lattice transformation in zinc sulfide. However, if manganese was  $1/2$

USSR

ARKHANGEL'SKIY, G. Ye., VOZNESENSKAYA, T. I., Kristallografiya, Vol 18, No 3, May/Jun 73, pp 544-547

introduced into the cubic lattice at the instant of lattice formation, reheating to  $1170^{\circ}\text{C}$  does not form the hexagonal phase. A crystal without manganese grown by the same method and then activated with manganese by diffusion acquires a hexagonal phase on the surface. Thus the hexagonal phase is formed in the diffusion process. The authors thank N. A. Gorbacheva and I. V. Shtambur for furnishing the crystals.

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- 31 -

1/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--DEFECTS OF ZNS I CRYSTALS AND THEIR ELECTRON PARAMAGNETIC RESONANCE  
SPECTRUM -U-  
AUTHOR--(02)-LAVROV, A.V., ARKHANGELSKIY, G.YE.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 297-301  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--EPR SPECTRUM, CRYSTAL DEFECT, ZINC SULFIDE, EQUILIBRIUM  
CONSTANT, CRYSTAL GROWTH, ION DISTRIBUTION, UV IRRADIATION, REACTION  
KINETICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1418 STEP NO--UR/0076/70/044/002/0297/0301  
CIRC ACCESSION NO--AP0135092  
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF DEFECTS IN ZNS I SINGLE CRYSTALS GROWN BY THE GAS TRANSPORT METHOD (R. NITSCHKE, 1960) WAS STUDIED BY CALCG. EQUIL. CONSTS. OF THE POSSIBLE REACTIONS OCCURRING DURING THE CRYSTAL GROWTH, BY ANALYZING THE KINETICS OF THE FORMATION OF S VACANCIES, AND BY MEASURING AND ANALYZING EPR SPECTRA OF ZNS I CRYSTALS AT ROOM TEMP. AND AT 77DEGREESK AND 9560 MHZ. IN DARK AND AFTER IRRADIATION WITH UV RADIATION (LAMBDA EQUALS 365 NM). THE FORMATION OF VACANCIES DURING THE CRYSTAL GROWTH LEADS TO AN INCREASE IN ZN CONCN. THE PARAMAGNETIC ZN PRIME POSITIVE IONS LOCATED BETWEEN THE LATTICE POINTS ARE RESPONSIBLE FOR THE OBSD. EPR SIGNALS (G EQUALS 1.9996) IN THE IRRADIATED CRYSTALS. THE INTENSITY OF THE EPR SPECTRA OF ZNS I CRYSTALS DECREASES WITH INCREASING SUPERSATN. DURING CRYSTAL GROWTH. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.314.57(088.8)

ARKHANGEL'SKIY, N.L., KOROLEV, A.N. [Ivanov. energ. in-t--Ivanov Power Institute]

"Null Transistorized Inverter With Separate Frequency And Voltage Control"

USSR Author's Certificate No 266039, filed 29 May 67, published 10 Aug 70 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 43644P)

Translation: An improvement is proposed for a null 3-phase inverter, which contains commutation units with commutating transformers and capacitors. For simplification and increased reliability, it is proposed to arrange these commutating transformers in one magnetic circuit, to connect the primary winding common to them across a commutating thyristor to the input of the null inverter, and to connect a capacitor in parallel with the iterated network [tseepochka] of the primary winding and commutating thyristor. The said iterated network is joined in one of the versions to the input of the null inverter through a supplementary thyristor. 5 ill. I.R.

1/1

- 17 -

1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--OPTIMAL TOTALITY OF THRESHOLD ELEMENT PARAMETERS AND ITS  
DETERMINATION -U-  
AUTHOR--ARKHANGELSKIY, S.V.  
COUNTRY OF INFO--USSR  
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 4, PP 84-93  
DATE PUBLISHED-----70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT  
TOPIC TAGS--ELECTRIC DEVICE, RELIABILITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1700 STEP NO--UR/0103/70/000/004/0084/0093  
CIRC ACCESSION NO--AP0118678  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118678

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS INTRODUCED THE NOTION OF THE OPTIMAL STRUCTURE OF A THRESHOLD ELEMENT BY THE RELIABILITY OF THE INPUT SIGNAL. IT IS SHOWN THAT THE DETERMINATION OF THE INDICATED STRUCTURE IS REDUCED IN THE MAIN TO DETERMINING A HYPERPLANE SEPARATING THE SET N DIMENSIONAL ENSEMBLES FROM EACH OTHER IN THE BEST WAY POSSIBLE. THE DERIVATION OF THE FORMULA TO DETERMINE SUCH A HYPERPLANE IS MADE CONFORMABLY TO ANY N DIMENSIONAL DISCRETE ENSEMBLES. THE FORMULA HAS ITS INDEPENDENT MEANING. IT MAY BE USED FOR THE LINEAR SEPARATION OF TWO ENSEMBLES AND, IN PARTICULAR, FOR THE SYNTHESIS OF A THRESHOLD ELEMENT BY THE SET LOGICAL FUNCTION AND FOR THE CHECKING OF THIS FUNCTION FOR THE REALIZABILITY OF THE THRESHOLD ELEMENT.

UNCLASSIFIED

USSR

ARKHANGEL'SKIY, Ye. A., ZNAMENSKIY, A. A., LUKOMSKIY, Yu. A.,  
CHERNYSHEV, E. P.

"Modeling on Analog Computers"

Modelirovaniye na Analogovyykh Vychislitel'nykh Mashinakh [English Version  
Above], Leningrad, Energiya Press, 1972, 208 pages (Translated from  
Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V815 A).

Translation: This book was designed by the authors to be a brief manuscript, to reflect not so much the structure of an analog computer as the peculiarities and various methods of modeling of a broad range of scientific and technical problems on analog machines.

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USSR

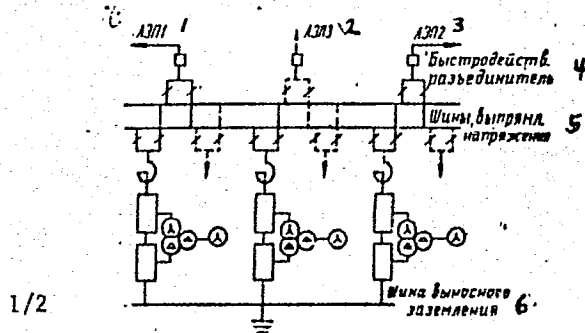
UDC 621.311.442(088.8)

ARKHANGEL'SKIY, YE. A., KULAKOV, V. P.

"Converting Substation"

USSR Author's Certificate No 267737, filed 28 Aug 63, published 9 Jul 70  
(from *RZh-Elektrotehnika i Energetika*, No 2, Feb 71, Abstract No 2 Ye63 P)

Translation: It is proposed that several single or multiple bridge converters be connected to reactors and disconnects in parallel to one or two unipolar rectified voltage collecting buses (see the figure) at the PPT [semiconducting triode?] substation. Direct current electric power transmission lines are



- Key: 1.LEP1 [electric power line]  
2.LEP3  
3.LEP2  
4.high-speed disconnect  
5.rectified voltage buses  
6.remote ground bus

USSR

ARKHANGEL'SKIY, YE. A., et al., USSR Author's Certificate No 267737, filed 28 Aug 63, published 9 Jul 70

connected to these buses. In case of an emergency in the converters, the synchro protect blocks the grids of all the rectifiers of the converters; then automatic reclosing of the given converter takes place. In case of a short circuit on the power line, all the converters connected to the given section of collecting buses are blocked, the damaged power line is excluded by high-speed disconnects in the currentless interval, and then automatic reclosing of the converters takes place. If the converters are equipped with uncontrollable rectifiers, lower excitation is used to extinguish and ignite them. The scheme insures independent operation of the converters and localization of emergencies without using expensive DC breakers. There is 1 illustration.

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USSR

UDC 576.858.75.095.383

ARKHANGEL'SKIY, YE. V., CHEPULIS, G.-K. S., DERKACH, YU. S., KOSYAKOV, P. N.,  
and ZHDANOV, V. M., Institute of Virology imeni D. I. Ivanovskiy, Academy of  
Medical Sciences USSR, Moscow

"New Evidence that Influenza Virus Can Be Freed of Host Cell Antigens"

Moscow, Voprosy Virusologii, No 5, Sep/Oct '72, pp 586-591

Abstract: AO/PR8 influenza virus always contains host cell antigens. Species-specific chicken antigen is located on the surface of the virus, while Forssman's heterogenous antigen and group specific A antigen are incorporated into deeper structures. By exposing influenza virus -- prepurified through cellulose ion-exchange column chromatography -- to the enzymatic activity of trypsin, the antigens can be removed from the virus, as evidenced by immunochemical and fractional analysis and by radioisotope methods. Influenza virus treated with trypsin preserves its biological properties. However, it no longer exhibits its activity toward tissue antisera and reacts only with virus-specific antisera.

1/1

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ARKHANGEL'SKIY, Ye. V.

medicine/virology

So: JPRS 55177

14 FEB 78

UDC 576.858.75.095.383

диссертация  
Coltchak

DISSIMILAR LOCALIZATION OF SPECIES, HETEROGENEOUS (FORSSMAN) AND GROUP ANTIGENS OF A HOST CELL IN A BIOLOGICALLY ACTIVE INFLUENZA VIRUS

[Article by P.N. Kosyakov, Ye. V. Arkhangel'skiy, of the Institute of Virology, Leningrad, USSR Academy of Medical Sciences; Moscow, Yegorov Virusolnelli, Russian, No 6, 1971, submitted 5 October 1970, pp 721-725]

In the biologically active influenza virus AO (PR8) the presence of three antigenic components of the host cell has been demonstrated: species, Group A and Forssman antigen. These antigens are dissimilar accessible to antibody action. The Forssman antigen, in distinction from the species, are found in the native virus only after its treatment with trypsin, which attacks to the dissimilar localization of these antigens in the structure of the virus. The species determinant Forssman and group antigens are absent from the virus's surface. The inability of the native virus to interact with the group and heterophilic antibodies contradicts the hypothesis according to which the host antigen in a virus is the result of enveloping the virus with fragments of cellular membrane. The latter contains on its surface serologically active group and Forssman antigens. These antigens are not found in the native influenza AO virus.

The works of a number of investigators [1, 9, 11, 12, 15, 16] have established that the micro-group viruses include in their structures cellular substances in which the virus reproduces. In influenza virus, Sendai, pseudo foot plague, cultivated on chorio-allantoic membrane of chick embryo, three cellular antigens were found: species, group and heterogenous Forssman antigen [2, 4-7]. Electronmicroscopic observations [8, 10, 13, 14] make it possible to make the supposition that host antigens in a virus are connected with fragments of the cellular membrane which envelops it upon coming out of the cell.

USSR

UDC 531.381

ARKHANGEL'SKIY, YU. A., (Moscow)

"On Kovalevskaya Gyroscope Motion in the Delauney Case"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 36, No 1, 1972, pp 138-141

Abstract: Motion of a solid body about an axis located near the larger axis of inertia ellipsoid is investigated, assuming that a high angular speed is imparted to the body. Equations of motion of a heavy solid body around a stationary point under Kovalevskaya assumption are analyzed, assuming that at initial time the main axis of inertia  $O_y$  lies in a horizontal plane, the main axis  $O_z$  makes with vertical an angle  $0_0$  ( $0 < 0_0 \leq \pi/2$ ) and the projection of initial angular velocity on axis  $O_z$  is a large value. The analysis presented here for  $0 < 0_0 < \pi/2$  and  $0_0 = 0$  makes it possible quite sufficiently to trace the motion of Kovalevskaya gyroscope in the Delauney case and to show the dependence of this motion on gyroscope design parameters and initial condition of motion.

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USSR

UDC: 681.327

ARKHANGEL'SKIY, Yu. B.

"Data Input to Digital Control Computers"

V sb. Elementy tsifr. sistem upr. (Elements of Digital Control Systems--collection of works), Leningrad, "Nauka", 1971, pp 35-43 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B405)

Translation: The paper analyzes the requirements imposed on devices for input to control computers. Methods are described for manual and automatic, series and parallel conversion, and input of codes into digital computers. Mathematical relations are given for conversion of cyclic codes to arithmetic codes as well as schematic diagrams for the converters and methods of scaling the input information. Seven illustrations, bibliography of nine titles. Resumé.

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USSR

UDC 681.324

ARKHANGEL'SKIY, Yu. B.

"Information Input in Control Computers"

Leningrad, Elementy Tsifrovyykh Sistem Upravleniya, "Nauka," 1971, pp 35-43

Abstract: The problem arises of input of information into the computer in designing control systems utilizing a computer as the control organ; these problems are of two types: (1) information input into the memory device; and (2) information input from the system or process of control. In both cases the information must be encoded for computer operation. This article is concerned with these problems. The input of initial data into the computer occupies considerable time and requires special equipment which satisfies the following requirements: (1) there must be a visual check of the information being introduced in a form that the operator can easily read; (2) it must be convenient for the operator to introduce the information; (3) the correctness of the input must be reliable; and (4) there must be a sufficient speed of response. The input of information into a computer from the control system may involve a wide variety of parameters, thus complicating the encoding of information into a digital code. It is practical to use transformers of electric voltage, time intervals, and  
1/2

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ARKHANGEL'SKIY, Yu. B., Elementy Tsifrovyykh Sistem Upravleniya, "Nauka," 1971, pp 35-43

angles of rotation; the most diverse physical quantities can be transformed into these three parameters. Finally, the author discusses scaling of the quantities to be introduced. Information input into a computer, whether it be initial data or parameters of the process or the control unit, is not completed with conversion into codes. The computation of real control processes involves quantities of different scales, and in order to correctly compute these quantities their scales must be matched. In conclusion, the author states that the operations of information input into control computers require careful examination of different types of equipment that can be used for input and conversion so as to simplify them, increase their reliability, and decrease the operating time; they must also satisfy the requirement imposed on them by the unit or the control process. The article contains 7 illustrations and 9 bibliographic entries.

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USSR

UDC 621.372.413

ARKHANGEL'SKIY, Yu. S.

"Microwave Heating of Running Liquids in Matched Chambers"

V sb. Vopr. elektron. tekhnika (Problems of Electronic Technology--  
collection of works), Saratov, 1971, pp 65-73 (from RZh-Radiotekhnika,  
No 7, Jul 71, Abstract No 7B150)

Translation: The author considers heating of a running liquid in a microwave chamber in the form of a short-circuited section of coaxial line or waveguide operating in the traveling-wave mode. The thermal field of the chamber is calculated for a constant damping factor. The author presents the results of an experimental check of the calculations on a model in the form of a glass tube through which water is passed at a stabilized flow rate; a coil heated by industrial-frequency current is placed in the tube to heat the water. One illustration, bibliography of three titles. H. S.

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USSR

UDC: 621.372.822

ARKHANGEL'SKIY, Yu. S., KOLOMEYTSEV, V. A.

"Heat Field of a Rectangular Waveguide With an Absorbing Film on the Inner Surface"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1971, pp 82-92 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B135)

Translation: Computational relationships are found for determining the heat field of a rectangular waveguide with a thin microwave power absorbing film applied to the inner surface. An investigation is made of the process of heating of the waveguide during the transmission of pulse power through it. Three illustrations, bibliography of seven titles. Resumé.

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USSR

UDC 621.385.032:538.574.5:539.23

*A*  
ARKHANGEL'SKIY, YU, S.

"Investigation Of Thin Absorbing Films"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology -- Collection Of Works), Saratov, 1970, pp 85-92 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A97)

Translation: A method is given for broadening the useful range of thin absorbing films with a cylindrical dielectrical backing. A graphico-analytic method for computing the dimensions of thin films is proposed. Summary.

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USSR

UDC: 629.12.011.7

ARKHANGORODSKIY, A. G., ROZENDENT, B. Ya., SIMANOVICH, A. I., Kaliningrad  
Technical Institute of the Fishing Industry and Fisheries

"Side for a Boat Hull"

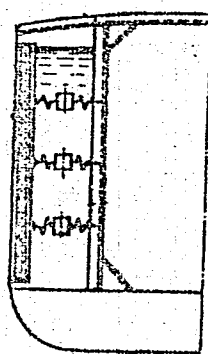
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 13, May 72, Author's Certificate No 335146, Division B, filed 20 Apr 68,  
published 11 Apr 72, pp 61-62

Translation: This Author's Certificate introduces: 1. A side for a boat hull which contains outer hull plates enclosing a space with elastic baffles which is partially filled with liquid. As a distinguishing feature of the patent, the impact resistance of the siding is improved by arranging the elastic barriers horizontally and making them with bypass channels joining sections of the liquid-filled space which are separated by the baffles, and by using sandwich type hull plating with an elastic filler. 2. A modification of this design distinguished by the fact that each bypass channel is made with a chamber which has apertures on the ends. This chamber accommodates a floating piston with a central open aperture, the upper part of the floating piston being tapered and coupled to the upper end of the chamber.

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USSR

ARKHANGORODSKIY, A. G. et al., USSR Author's Certificate No 335146



2/2

Molecular Physics

USSR

UDC: 539.219.3:669.01

ARKHANOY, V. I., Academician of the Academy of Sciences of the UkrSSR,  
BABOSYUK, A. L., BALANAYEVA, N. O., BOHOSLOVS'KYY, V. M., KOVALENKO,  
L. D., STAFYEYEV, N. M., Donetsk Physicotechnical Institute, AS UkrSSR

"Investigation of the Kinetics of Growth of Layers in Two-Phase Scales"

Kiev, Dopovidi Akademii Nauk Ukrain's'koi URSS, Seriya A: Fizyko-  
-Tekhnichni ta Matematychni Nauki, No 4, Apr 71, pp 341-344

Abstract: The authors investigate the kinetics of growth of layers of scale formed when Armco iron is oxidized at a temperature of 540°C and when cobalt is oxidized at 650°C. It is shown on the basis of experimental data that a layer of  $Fe_3O_4$  forms when iron is oxidized in air, while the  $Fe_2O_3$  layer on iron remains practically unchanged after a certain thickness is reached. In the case of cobalt, an increase is observed in the thickness of the  $Co_3O_4$  layer, while the thickness of the  $CoO$  phase remains constant. These results are attributed to the imperfection of the oxides from which the scale is formed and to the collective participation of atoms in matter transfer.

1/1

Acc. Nr.:

**AAQ101013**

Abstracting Service: **3-70**

Ref. Code:

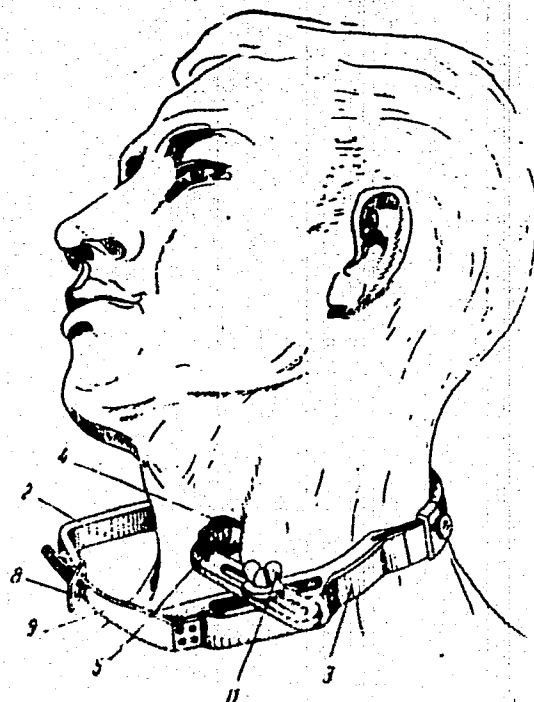
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General  
Derwent,

245984 CAROTID ARTERY TOURNIQUET consists of elastic neck belt with buckle device and pressure pad, and has a cantilever 5 to hold the pressure pad 4. This cantilever is mounted on an axis in the groove of a flange 3 and can be fixed in any position by a bolt 11. The pressure pad is connected to the cantilever by a ball and socket joint. This conveniently copes with with patients' anatomical differences. The elastic belt holding the jaws of the device is expandable to prevent pressure on neck muscles. 14.5.68. as 1239380/31-16.  
P.Z. ARKHANTSEV, (28.10.69.) Bul. 20/11.6.69. Class 30a.  
Int. Cl. A61b.

REEL/FRAME  
**19850579**

AA0101013



19850580



1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MECHANISM OF THE ACTIVATION OF CIS AND TRANS  
AZIDOCHELOBIS(ETHYLENEDIAMINE)COBALT SALTS -U-  
AUTHOR-(02)-PANASYUK, V.D., ARKHAROV, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 693-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COBALT COMPLEX, ETHYLENEDIAMINE, CHEMICAL REACTION MECHANISM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1470 STEP NO--UR/0078/70/015/003/0693/0696  
CIRC ACCESSION NO--AP0116907  
UNCLASSIFIED

2/2 013

.UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AQUATION OF CIS AND TRANS (CO(EN) SUB2 (N SUB3) CL) PRIME POSITIVE (EN EQUALS ETHYLENEDIAMINE) WAS STUDIED IN THE PRESENCE OF HNO SUB3 OR NACLO SUB3 IN AQ. OR AQ. ORG. SOLVENT SOLNS. THE AQUATION REACTION IS 1ST ORDER WITH ACTIVATION ENERGY (E SUBA) 21-23.9 KCAL-MOLE, DEPENDING ON SOLVENT USED. THE VALUES OF E SUBA, DELTAS PRIME NOT EQUIL TO, DELTAF PRIME NOT EQUIL TO AND FREQUENCY FACTOR FOR AQUATION IN 40PERCENT ME SUB2 CO, ETOH, OR ETHYLENE GLYCOL SOLNS. ARE GIVEN. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 539.2+539.171+669-154

NOVOKHATSKIY, N. A., LAD'YANOV, V. I., ARKHAROV, V. I., Academician of the UkrSSR Academy of Sciences, VELYUKHANOV, V. P., Donetsk Physicotechnical Institute, UkrSSR Academy of Sciences

"The Two-Isotherm Method in Diffractometry of Melts"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 4, 1 Aug 73, pp 814-817

Abstract: A "two-isotherm" method based on Fourier analysis is proposed for interpreting the diffraction patterns of melts with regard to the specific characteristics of their micrononhomogeneities. The procedure shows the partial diffraction effects of structural components, in principle, is applicable to multicomponent melts consisting of several types of clusters and a general disordered zone, and can be extended to analysis of the diffraction patterns of molten salts, oxides, and so forth.

1/1

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USSR

UDC: 51

SOBOLEV, Yu. S., CHERNETSKIY, V. I., ARKHAROV, V. I.

"Concerning Refinement of an Algorithm Which Yields a Quasioptimum Solution for a Problem of Selection"

Tr. Sev.-zap. zauch. politekhn. in-ta (Works of the Northwest Polytechnical Correspondence Institute), 1971, No 14, pp 13-16 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V434)

[no abstract]

1/1

Acc. No. **A70048311**

Abstracting Service:

Ref. Code:

INTERNAT. AEROSPACE ABST. **5-70 UR0020**

**A70-24271 #** Effect of nonmetallic inclusions on the viscosity of metallic melts (Vliianie nemetallicheskih vkluchenii na viazkost' metallicheskih rasplavov). V. I. Arkharov, G. S. Ershov, I. A. Novokhatskii, and A. M. Kovalenko (Akademiia Nauk Ukrainsskoi SSR, Fiziko-Tekhnicheskii Institut, Donetsk; Ukrainskii Nauchno-Issledovatel'skii Institut Spetsial'nykh Stal'ei, Kharkov, Ukrainian SSR). *Akademiia Nauk SSSR, Doklady*, vol. 190, Jan. 11, 1970, p. 366-368. 6 refs. In Russian.

Study of the kinematic viscosity of molten steel of a single composition containing various amounts of nonmetallic oxide (mainly corundum) inclusions in the temperature range from 1600 to 1825 C. The viscosity values were determined by the method of torsional vibrations of a crucible containing liquid metal in an inert atmosphere. It is found that the viscosity of liquid steel increases substantially with an increase in the quantity of corundum dispersed in it. This relative increase in viscosity due to the presence of nonmetallic inclusions decreases with an increase in temperature.

A.B.K.

REEL/FRAME  
**19800013**

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--MECHANISM OF THE DISPLACEMENT OF INTERCRYSTALLITE BOUNDARIES DURING  
COLLECTIVE RECRYSTALLIZATION -U-  
AUTHOR-(02)-ARKHAROV, V.I., KRYSOV, V.I.

COUNTRY OF INFO--USSR *A*

SOURCE--FIZ. META. METALLOVED. 1970, 29(1), 131-7

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RECRYSTALLIZATION, GRAIN BOUNDARY, METAL DIFFUSION, COPPER,  
TEMPERATURE DEPENDENCE, GRAIN GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0050

STEP NO--UR/0126/70/029/001/0131/0137

CIRC ACCESSION NO--AP0105149

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105149

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW TREATMENT OF COLLECTIVE RECRYSTN. PHENOMENA IS PROPOSED, MAKING IT POSSIBLE TO UNDERSTAND THE ABRUPT COURSE OF THE MIGRATION OF INTERCRYSTALLITE BOUNDARIES AND PROVIDING A CRITERION FOR THE DIRECTION OF THEIR DISPLACEMENT. THIS TREATMENT ISSUES FROM THE CONCEPT OF MULTI AT. THICKNESS AND ASYMMETRY OF DISTRIBUTION OF EXCESS ENERGY OF THE TRANSITION ZONE OF INTERLINKED CRYSTALLITES. THE PROPOSED MECHANISM OF BOUNDARY MIGRATION IS BASED ON THE DIFFUSIONLESS PROCESS OF ATOM DISPLACEMENTS, WHICH TRAVERSE THIS ZONE IN STAGES; THE PULSATIONS OF THE EXCESS ENERGY VALUE IN THIS ZONE, RELATED TO THE PRESENCE OF STRUCTURAL DEFECTS, MAY CAUSE RETARDATION OR JUMP DISPLACEMENT OF THE BOUNDARY. THE ABRUPT DISPLACEMENT OF THE BOUNDARIES DURING COLLECTIVE RECRYSTN. WAS EXPTL. OBSD. IN CU, AND THE EXISTENCE OF 2 TYPES OF JUMPS WAS DETD. THEIR TEMP. DEPENDENCE WAS DETD. AND AN EXPLANATION IS GIVEN RELATIVE TO THEM ON THE BASIS OF THE CONCEPT CONCERNING THE DISCRETENESS OF THE SPECTRUM OF STRUCTURAL HETEROGENEITIES. FACILITY: DONETS. FIZ. TEKH. INST., DONETSK, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--HYDROGEN DIFFUSION IN MOLTEN IRON -U-  
AUTHOR-(04)-ARKHAROV, V.I., NOVOKHATSKIY, I.A., YERSHOV, G.S., KOVALENKO,  
A.M.  
COUNTRY OF INFO--USSR *A*  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1329-32  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--HYDROGEN, GAS DIFFUSION, FERROUS LIQUID METAL, IRON, METAL  
CONTAINING GAS, GAS CONTAINING METAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1134 STEP NO--UR/0020/70/190/006/1329/1332  
CIRC ACCESSION NO--AT0116599  
UNCLASSIFIED



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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116599

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SENSITIVITY AND THE ACCURACY OF THE VOLUMETRIC METHOD USED IN THE STUDY OF H DIFFUSION IN MOLTEN FE WERE INCREASED BY THE SUBSTITUTION OF A RING GAP FOR THE CAPILLARY. THE ANNULAR SPACE WAS FORMED BY 2 CONCENTRIC TUBES. AT 1560-1650 DEGREES, THE WIDTH OF THE GAP FILLED WITH MOLTEN FE DID NOT AFFECT THE DIFFUSION COEFF.,  $D_{SUBH}$ . THE AMT. OF H ABSORBED,  $V_{SUBH}$ , INCREASED LINEARLY WITH  $\tau$  PRIME ONE HALF, WHERE  $\tau$  IS TIME. EXPTL.  $D_{SUBH}$  EQUALS 5.21 TIMES  $10$  PRIME NEGATIVE 2  $\exp(\text{MINUS } 10,000 - RT)$ . THE ACTIVATION ENERGY IS 10.0 KCAL PER MOLE. THE  $D_{SUBH}$  IS LARGER THAN  $D_{SUBN}$  AND  $D_{SUBO}$ . DIFFUSION IS AN ADDITIVE CHARACTERISTIC DUE TO THE EXISTENCE IN THE MOLTEN FE CLUSTERS,  $\psi$  SUBCL, AND DISORDERED,  $\psi$  SUBDIS, REGIONS, WHERE  $\psi$  SUBCL PLUS  $\psi$  SUBDIS EQUALS 1.  $D$  EQUALS  $\psi$  SUBCL  $D_{SUBCL}$  PLUS  $\psi$  SUBDIS  $D_{SUBDIS}$ . FACILITY: DONETSK. FIZ.-TEKH. INST., DONETSK, USSR.

UNCLASSIFIED

USSR

UDC 681.121.62-525

ARKHIPENKO, A. P., and SEMENOV, A. I.

"Dep.\* Flow Sensor for Measuring Averaged Air Consumption of Pneumatic Machines of Punching Action"

In-t Gorn. Dela Sib. Otd. AN SSSR [Mining Institute of the Siberian Branch of the Academy of Sciences USSR], Novosibirsk, 1972. Eight pp, illustr., nine biblio. refs. (Manuscript on deposit from Jul 11, 1972, at the All-Union Institute of Scientific and Technical Information, No 4572-720) (From Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.758)

Translation: A method is reported for measuring with the help of a flow sensor pulsating with a frequency up to 40 Hz air flows in pipelines, 50-100 mm in diam. in the range from zero to 30-60 nm<sup>3</sup>/min. The construction of the sensor and the sensometric measuring schema are presented. Four illustr., nine biblio. refs.

\*DEP - manuscript of completed scientific works on natural and technical sciences carried out in institutions of the Academy of Sciences USSR and the Academy of Sciences of Allied Republics, the manuscript taken for deposit in the All-Union Institute of Scientific and Technical Information, where copies of the manuscript or of its parts can be ordered.

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Graphite

USSR

UDC 669.11.2.063.5:669.29-154

GRIGOR'YEV, G. A., ARKHIPKIN, V. I., AGAYEV, A. D., and KOSTIKOV, V. I.,  
Moscow Institute of Steel and Alloys

"On the Wetting Kinetics of Graphite With High-Melting Liquid Metals"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7,  
1972, pp 15-18

Abstract: The Department of Physical Chemistry of the Moscow Institute of Steel and Alloys has developed a new method for describing the process of wetting graphite with high-melting liquid metals. The process is described on the basis of the dimensionality theory by derived criterional equations. The method is used in conjunction with a tensometric device and a loop oscillograph. The force acting on a vertical pin or plate is registered from the initial contact with the horizontal surface of the melt until the equilibrium state is reached. Three types of oscillograms for Ti, Hf, V, Nb, and Zr were derived and the relaxation times of the graphite wetting process with these metals were determined. In the case of wetting with liquid Zr, the kinetics of the process are obviously determined by the propagation rate of the carbide film on the graphite surface, the relaxation time being of the same order as for other metals ( $\approx 0.001$ ). One figure, one table, five formulas, four bibliographic references.

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USSR

UDC 669.29-154:541.183

KOSTIKOV, V. I., GRIGOR'YEV, G. A., ~~ARKHIPKIN, V. I.~~ and AGAYEV, A.D.,  
Moscow Institute of Steels and Alloys

"Surface Tension Measurements of Group IV High-Temperature Metals"

Moscow, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya,  
No 3, 1972, pp 25-27

Abstract: The paper deals with surface tension measurements of refractory titanium, zirconium, and hafnium metals by employing the new method of suction of a cylinder into the molten metal versus the sessile drop, suspended drop, and drop weight methods used in earlier research. In the suction method the surface tension of the metals is measured from their force of suction of a solid plate or a cylinder into the melt. A diagram of the surface tension measuring device is shown. Correlation of measurement data shows good agreement with those in earlier papers involving the use of other procedures. The high accuracy of the method coupled with the equally good reproducibility of results makes this method suitable for use in measuring the surface tension of metals featuring extremely high melting points. (1 illustration, 1 table, 8 bibliographic references)

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Graphite

USSR

~~ARKHIPKIN, V. I.~~, KOSTIKOV, V. I., GAUKHEV, YU. V., and RUBINCHIK, YE. A.,  
Moscow Institute of Steel and Alloys

"Two-Layer Protective Coatings on Graphite"

Kiev, Poroshkovaya Metallurgiya, No 5, May 70, pp 55-59

Abstract: In view of the widespread use of graphite in modern technology and the advantages of tungsten coatings on graphite, studies were conducted of intermediate layers to decrease carbon diffusion into tungsten and its detrimental effect on the exploitative properties of the coating. In the experiments, intermediate layers of SiC, TiC, ZrC, and HfC were applied on two types of graphite: MG-1 and AG-1500. The carbide layers were applied by spreading, using the method developed earlier by V. P. Yelyutin and his associates. The external tungsten coating was applied by plasma spraying using the UPU-3 device in a chamber with a controllable medium (purified argon). The density of tungsten coatings obtained by this method was about 90%.

Interaction in the systems graphite -- metal carbide -- tungsten were studied, and the parameters of mutual diffusion of metal atoms in these systems were determined. As a result of the investigations conducted, it was established that the most promising intermediate layer material is hafnium carbide. The use of silicon  
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USSR

ARKHIPKIN, V. I., et al., Poroshkovaya Metallurgiya, No 5, May 70, pp 55-59

carbide intermediate layers is inexpedient due to the formation of comparatively low-melting tungsten silicides.

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ARKHIPOV, G. N.

SOME FACTORS DETERMINING LOCALIZATION OF TUMORS AND RESISTANCE OF THE RAT'S STOMACH TO INGESTED CARCINOGENIC HYDROCARBONS

UDC: 616.33-006.092.9

[Article by G.N. Arkhipov, Institute of Nutrition, USSR Academy of Medical Sciences, Moscow; vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 27-30]

In the world literature many experiments have been described involving ingestion of carcinogenic hydrocarbons by laboratory rodents. The chief goal of the vast majority of these experiments was to induce development of a tumor in the rat's and mouse's preduodenal (glandular stomach) [L.F. Laktionov and N.G. Subolov; Ye.Ye. Pogoznyants; O.G. Prokof'yeva; Stewart and Lorenz]. However, such attempts usually failed. At best, tumors developed in the rumen (Ye.Ye. Pogoznyants; O.G. Prokof'yeva; T.V. Shemyakina; Berenblum and Baran). Not uncommonly, following ingestion of carcinogens developed far from the gastroduodenal tract (Hogdins and Grand; Shay et al.). In this connection, it was assumed that the chief factor determining the resistance of the stomach to carcinogen and, consequently, the localization of induced tumors following oral ingestion of carcinogens is the mucous barrier of the stomach (Ye.Ye. Subolov et al.). However, experiments with administration of carcinogens together with substances that dilute mucous (Lorenz and Stewart; Hogen) also yielded negative results.

In our experiments which we describe herein, an effort was made to demonstrate a relationship between the stomach's resistance to carcinogenic hydrocarbons administered via the alimentary tract and the localization of induced tumors on the one hand, and the fluid contents of the stomach and extent of filling with food masses, on the other.

The experiments were conducted on weanling female rats weighing 100-120 grams. The animals were divided into three groups (32 in each).

The first group of rats (control of incidence of spontaneous tumors) was left intact. The second group of rats was subjected to administration through an esophageal tube of methylcholanthrene (MC) in olive oil (0.05 mg MC in 0.1 ml oil). The animals received 0.5 ml of the MC oil solution twice a day. Both groups were maintained on the standard feed diet. Water was not

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF CHLOROMETHYLALKOXY SILANES WITH  
N-PHENYLAMINOETHOXY, ALKYL, SILANES -U-  
AUTHOR-(03)-ZHDANOV, A.A., PAKHOMOV, V.I., ARKHIPOV, I.A. *A*  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 392-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANIC SILANE, CHLORINATED ORGANIC COMPOUND, HETEROCYCLIC  
BASE COMPOUND, DISTILLATION, AMINE, BENZENE DERIVATIVE, ALKOXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1765 STEP NO--UR/0062/70/000/002/0392/0396  
CIRC ACCESSION NO--AP0120472  
UNCLASSIFIED



2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0120472  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISTN. THROUGH A FRACTIONATING  
COLUMN SHOWN ON MICROFICHE. FACILITY: INST. ELEMENTOORG.  
SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 624.07:534.1

KRISHTAL, M. A., GOLOVIN, S. A., ARKHIPOV, I. K., ROSTOVITSEV, N. M.,  
GORDON, V. A.

"Determining Measures for Energy Scattering in the Excitation of Transverse Resonance Vibrations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering Under Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 191-195 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V269)

Translation: Semiempirical relationships are presented which make it possible to determine on the basis of amplitude-time curves obtained from vibrograms under the excitation of transverse resonance oscillations of the sample the decrements in vibrations for a given material (for different stresses) without specifying the mechanism for internal energy scattering. It is shown from the processing of results for three samples (copper, nickel, titanium) that the calculated decrements in vibrations under excitation of oscillations are considerably different from decrements obtained experimentally in studying damping of vibrations. Yu. G. Balakirev.

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USSR

UDC 8.74

ARKHIPOV, I. M., YERSHOV, V. A., YERSHOVA, E. B.

"Problem of Algorithms for Selecting Connecting Paths in Four-Cascade Commutation Systems"

V sb. Sist. raspredeleniya inform. (Information Distribution Systems -- collection of works), Moscow, Nauka Press, 1972, pp 136-145 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V571)

Translation: On the basis of analyzing the macrostates of a four-cascade commutation circuit, the algorithms for setting up the circuit diagram are formulated and described. The probability of the occurrence of internal blockings for the formulas and algorithms is calculated. The formulation of the algorithm for multicascade commutation systems with arbitrary structural parameters is presented.

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USSR

A

UDC 536.248.2.001.5

ARKHIPOV, L. I., and BAKLASTOV, A. M.

"Experimental Study of Heat Exchange During Vapor Condensation on a Rotating Disk in a Vacuum"

Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Sekts. Promteploenergetiki. Podseks. Sushil'n i teploobmen. ustroistv (Reports of the Scientific-Technical Conference on Summaries of Scientific Research Work for 1968-1969. Industrial Thermal Engineering Section, Subsection on Desiccating and Heat Transfer Devices), Moscow Power Engineering Institute, 1970, pp 96-102 (from RZh-Teploenergetika, No 5, May 70, Abstract No 5G93)

Translation: Experiments were run at pressures of 36 and 73.3 mbar; disk diameter was 210mm, and its rotational speed was from 100 to 2000 rpm. Empirical relationships are obtained for mean values of KTO (coefficient of thermal emission). Four figures, three references.

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